



Express Mail No. ER885314503US
Attorney Docket No.: AM-2044.C2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Tony Chiang et al.

SERIAL NO.: 10/796,602

FILED: March 8, 2004

FOR: METHOD OF PREVENTING DIFFUSION
OF COPPER THROUGH A
TANTALUM-COMPRISING BARRIER LAYER

§ GROUP ART UNIT: 1745

§ (Parent Application)

§

§ EXAMINER: J. Mercado

§ (Parent Application)

§

§

§ Attorney Docket No.:

§ AM-2044.C2

Date: July 8, 2004

**INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR § 1.97(b)(3)**

**Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450**

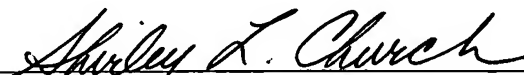
Sir:

In accordance with 37 CFR § 1.97(b)(3), applicants hereby request consideration of this Information Disclosure Statement. This Information Disclosure Statement is being submitted prior to the receipt of a first Office Action in the subject application. Applicants are providing herewith a copy of each document cited on the attached Form PTO-1449.

CERTIFICATE OF MAILING UNDER 37 CFR 1.10

I hereby certify that this paper is being deposited with the U.S. Postal Service on the date shown below with sufficient postage as U.S. EXPRESS MAIL NO. ER885314503US in an envelope addressed to: Mail Stop DD, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

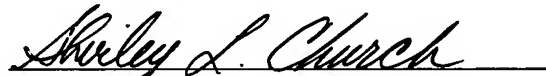
Date: July 7, 2004


Shirley L. Church, Reg. No. 31,858

The submission of this Information Disclosure Statement and Form PTO-1449 is not an admission that the art cited is "prior art" with respect to the present invention, nor is it a representation that no better art exists. Applicants hereby reserve the right to swear behind or otherwise disprove any alleged "prior" nature of any art cited should the facts support and the situation warrant such an action.

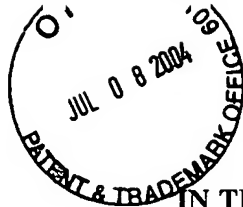
If the Examiner has any questions, he is respectfully requested to contact the undersigned attorney at the telephone number set forth below.

Respectfully submitted,

A handwritten signature in cursive script, reading "Shirley L. Church", is written over a horizontal line.

Shirley L. Church
Registration No. 31,858
Attorney for Applicants
(650) 473-9700

Correspondence Address:
Patent Counsel
Applied Materials, Inc.
P.O. Box 450-A
Santa Clara, California 95052



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Date: July 8, 2004

**INFORMATION DISCLOSURE STATEMENT
TRANSMITTAL LETTER**

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

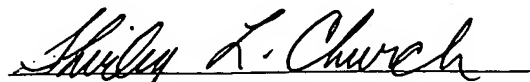
Sir:

Applicants are submitting the subject Information Disclosure Statement under 37 CFR § 1.97(b)(3). This Information Disclosure Statement is being submitted prior to the receipt of a first Office Action in the subject application.

CERTIFICATE OF MAILING UNDER 37 CFR 1.10

I hereby certify that this paper is being deposited with the U.S. Postal Service on the date shown below with sufficient postage as U.S. EXPRESS MAIL NO. ER885314503US in an envelope addressed to: Mail Stop DD, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

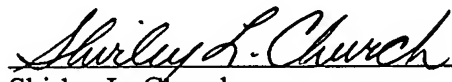
Date: July 8, 2004


Shirley L. Church, Reg. No. 31,858

Applicants do not believe that any fee is due in connection with the filing of this Information Disclosure Statement under 37 CFR § 1.97(b)(3). However, in the event that any additional fee is due, the Commissioner is hereby authorized to charge Deposit Account No. 50-1512 of Shirley L. Church, Sunnyvale, California, in the amount of such fee.

This transmittal letter is submitted in duplicate for accounting purposes.

Respectfully submitted,



Shirley L. Church
Registration No. 31,858
Attorney for Applicants

Correspondence Address:
Patent Counsel
Applied Materials, Inc.
P.O. Box 450-A
Santa Clara, California 95052

FORM PTO-1449
(Equivalent)

U.S. Department of Commerce
Patent and Trademark Office

U.S. Application Serial No.
10/796,602

Atty. Docket No.
AM-2044.C2



INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

(Use several sheets if necessary)

Tony Chiang et al.
Applicants

March 8, 2004
Filing Date

1745
Group

U. S. PATENT DOCUMENTS

Examiner Initial	Document Number	Issue Date	Name	Class	Subclass	Filing Date If Appropriate
_____	4,407,712	10/04/83	Henshaw et al.	204	298	
_____	4,514,437	04/30/85	Nath	427	39	
_____	4,657,778*	04/14/87	Moran	427	53.1	
_____	4,792,842**	12/20/88	Honma et al.	357	71	
_____	4,944,961	07/31/90	Lu et al.	427	38	
_____	4,976,839	12/11/90	Inoue	204	192.17	
_____	5,186,718	02/16/93	Tepman et al.	29	25.01	
_____	5,236,868	08/17/93	Nulman	437	190	
_____	5,246,885	09/21/93	Braren et al.	437	225	
_____	5,281,854**	01/25/94	Wong	257	740	
_____	5,302,266**	04/12/94	Grabarz et al.	204	192.12	

Examiner

Date Considered

Examiner: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

* Cited by the Examiner in parent application, U.S. Serial No. 09/886,439, and/or grandparent application, U.S. Serial No. 08/978,792.

** Cited on Search Report in corresponding PCT Application No. PCT/US98/22796.

U. S. PATENT DOCUMENTS

<u>Examiner Initial</u>	<u>Document Number</u>	<u>Issue Date</u>	<u>Name</u>	<u>Class</u>	<u>Subclass</u>	<u>Filing Date If Appropriate</u>
_____	5,312,509	05/17/94	Eschbach	156	345	
_____	5,320,728	06/14/94	Tepman	204	192.12	
_____	5,354,712	10/11/94	Ho et al.	437	195	
_____	5,358,616	10/25/94	Ward	204	192.15	
_____	5,478,455	12/26/95	Actor et al.	204	192.13	
_____	5,520,784	05/28/96	Ward	204	192.15	
_____	5,585,673	12/17/96	Joshi et al.	257	751	
_____	5,589,713**	12/31/96	Lee et al.	257	773	
_____	5,658,438*	08/19/97	Givens et al.	204	192.11	
_____	5,723,367**	03/03/98	Wada et al.	437	248	02/20/96
_____	5,725,739*	03/10/98	Hu	204	192.3	07/08/96
_____	5,780,357	07/14/98	Xu et al.	438	639	06/02/97
_____	5,783,282*	07/21/98	Leiphart	428	138	10/07/96
_____	5,897,752*	04/27/99	Hong et al.	204	192.12	05/20/97
_____	5,962,923	10/05/99	Xu et al.	257	774	08/07/95
_____	6,605,197	08/12/03	dING ET AL.	204	192.15	05/13/97

Examiner _____ Date Considered _____

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FOREIGN PATENT DOCUMENTS

<u>Examiner Initial</u>	<u>Document Number</u>	<u>Publication Date</u>	<u>Name</u>	<u>Class</u>	<u>Subclass</u>	<u>Translation If Appropriate</u>
_____	EP 0451571**	10/16/91	Wang	H01L	21/3205	
_____	EP 0823279	11/02/98	Aitchison	B01D	53/46	
_____	JP 8097279**	12/04/96	Shima et al.	H01L	021/768	

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

_____ Rossnagel et al., "Metal ion deposition from ionized magnetron sputtering discharge", *J. Vac. Sci. Technol. B*, Vol. 12, No. 1, pp. 449 - 453 (Jan/Feb 1994).

_____ Rossnagel et al., "Thin, high atomic weight refractory film deposition for diffusion barrier, adhesion layer, and seed layer applications", *J. Vac. Sci. Technol. B*, Vol. 14, No. 3, pp.1819 - 1827 (May/Jun 1996)..

<u>Examiner</u>	<u>Date Considered</u>
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